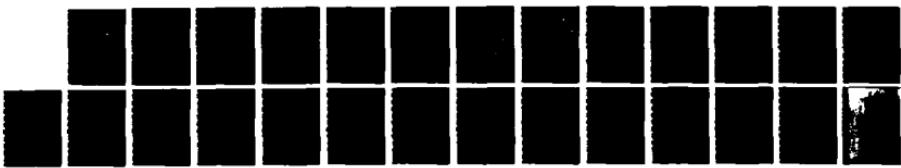
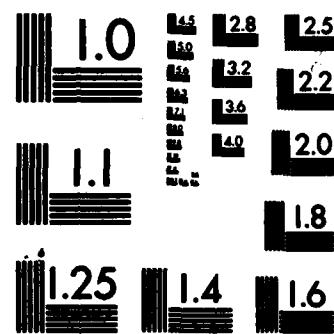


AD-A140 861 19313AT MLRS MISSILE NUMBER 4955 4793 4956 4777 4958 1/1
4792 ROUND NUMBER 55. (U) ARMY ELECTRONICS RESEARCH AND
DEVELOPMENT COMMAND WSMR NM ATM. D C KELLER 18 JAN 84
UNCLASSIFIED ERADCOM/ASL-DR-1334 F/G 4/2 NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

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METEOROLOGICAL DATA REPORT
19313AT MLRS
Missile Number 4955, 4793, 4956, 4777, 4950, 4792
Round Number 558/FB-001 thru 563/FB-006
18 January 1984

by

DONALD C. KELLER
Program Support Coordinator
Phone Number (505) 679-9568
AVN Number 349-9568

ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

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ECOM
UNITED STATES ARMY ELECTRONICS COMMAND

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4. TITLE (and Subtitle) 19313AT MLRS Missile # 4955, 4793, 4956, 4777, 4950, 4792 Round # 558/FB-001 Thru 563/FB-006	5. TYPE OF REPORT & PERIOD COVERED	
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19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19313AT MLRS, Missile Number 4955, 4793, 4956, 4777, 4950, 4792, Round Number 558/FB-001 thru 563/FB-006 are presented in tabular form.		

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INTRODUCTION

A313AT MLRS, Missile Numbers 4955, 4793, 4956, 4777, 4950, and 4792, Round Numbers 558/FB-001 thru 563/FB-006, were launched from Tula Gate, White Sands Missile Range (WSMR), New Mexico, at 1102:33, 1102:37, 1102:42, 1102:46, 1102:51 and 1102:55 MST, 18 Jan 1984. The scheduled launch times were 1100 MST with a 4.5 second separation.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the Tula Gate Met Site at T-0 minutes.

(2) Anemometer data were provided from existing tower-mounted anemometers at Tula Gate. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from pilot-balloon observations at:

SITE AND ALTITUDE

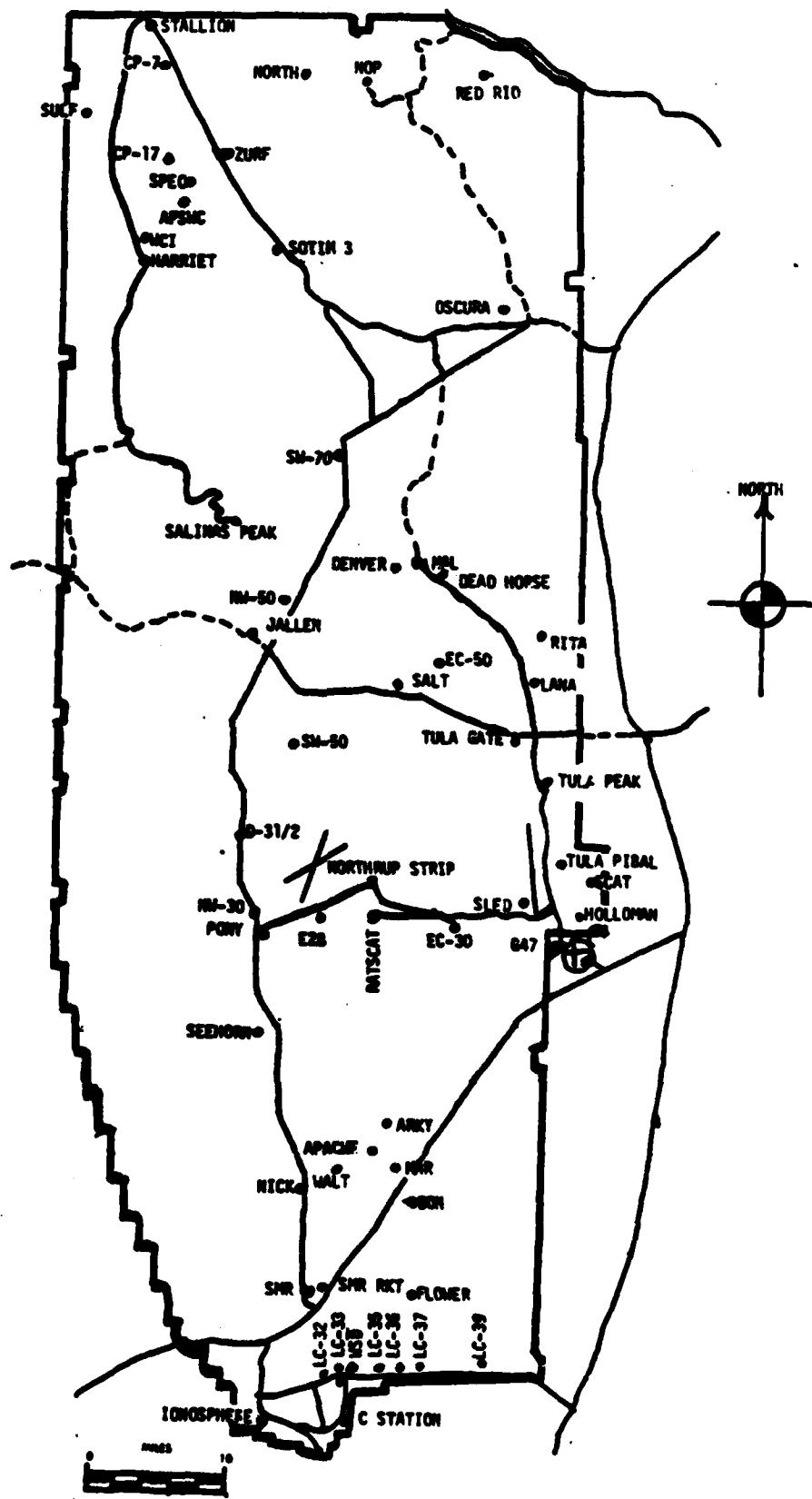
Tula Gate 950 meters
MAL 2000 meters

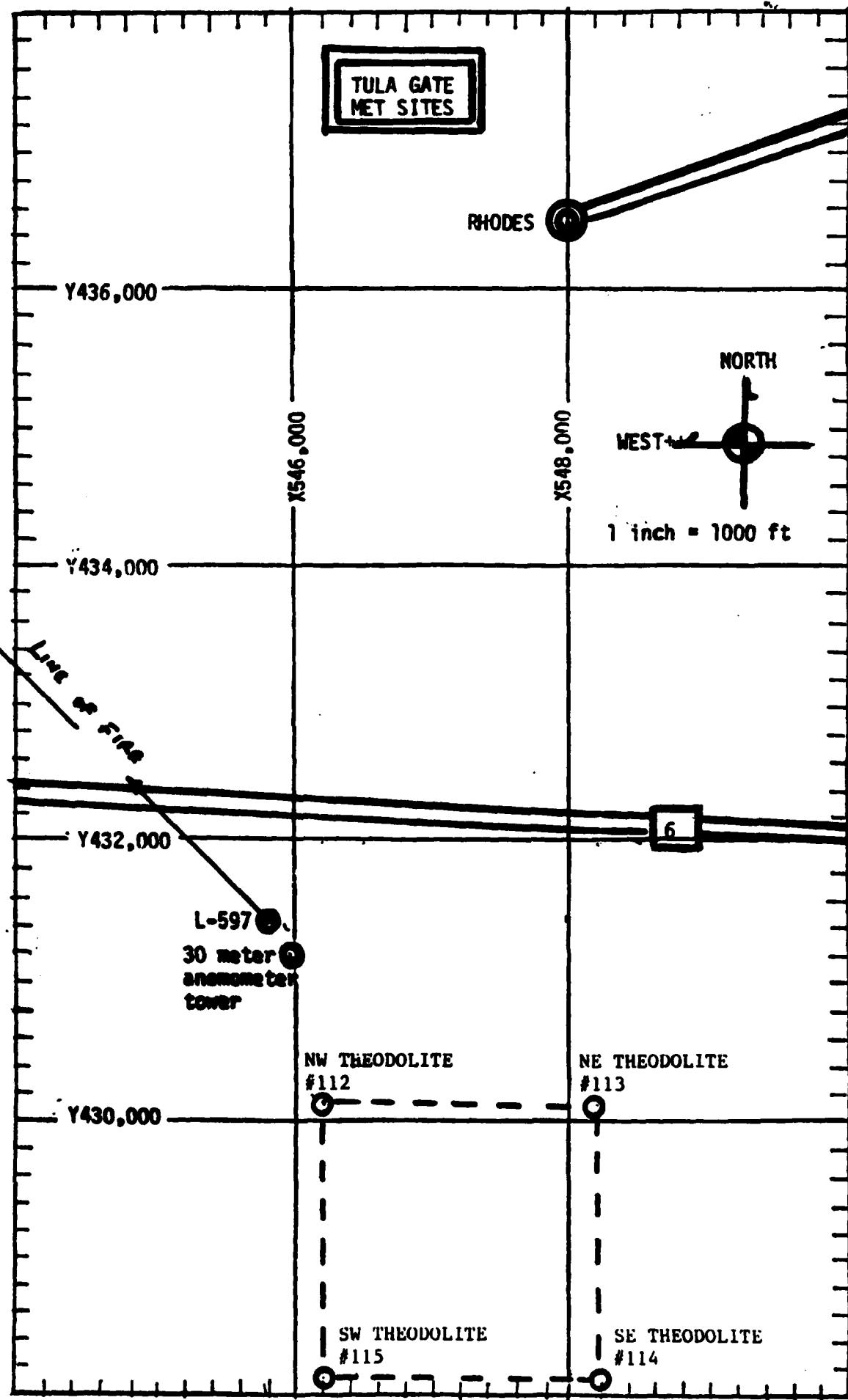
(2) Air structure data (rawinsonde) were collected at the following Met Sites.

SITE AND TIME

RITA 0945 MST
LANA 1015 MST
RITA 1100 MST

WSMR METEOROLOGICAL SITES





PROJECT SURFACE OBSERVATION

TABLE 1

DATE 18 JAN 84
YEAR

TIME H S T	PRESSURE mb	TEMPERATURE °C	DEW POINT °C	RELATIVE HUMIDITY %	DENSITY gm/m ³	WIND DIRECTION deg. TN	SPEED kts	CHARACTER kts	VISIBILITY
1100	883.0	6.0	-3.3	51		350	08		40

STATION Tula GateX = 545,944.89 Y = 431,158.70 H = 4102.47

OBSTRUCTIONS TO VISIBILITY	CLOUDS			REMARKS
	1st LAYER AMT TYPE	2nd LAYER AMT TYPE	3rd LAYER AMT TYPE	
				CLEAR

PSYCHROETRIC COMPUTATION

TIME:	1100			
DRY BULB TEMP.	6.0			
WET BULB TEMP.	2.0			
WET BULB DEPR.	4.0			
DEW POINT	-3.3°C			
RELATIVE HUMID.	51			

TABLE 2

ANEMOMETER DATA - 30 Ft Level of 30 Meter Tower

X= 545,944.89 Y= 431,158.70 H= 4102.47 (BASE)

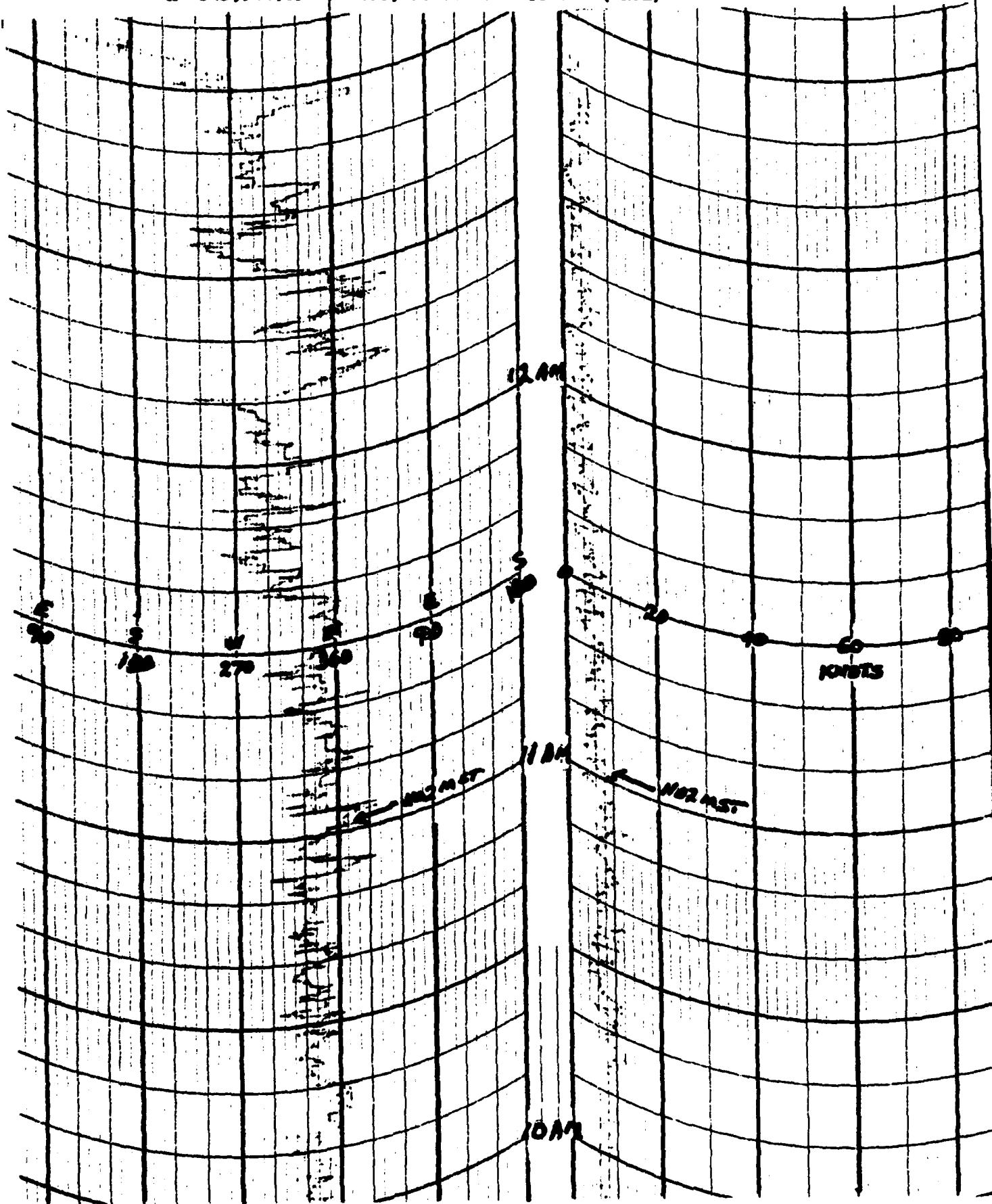


TABLE 3

ANEMOMETER DATA - 60 Ft Level of 30 Meter Tower

X= 545,944.89 Y= 431,158.70 H= 4102.47 (BASE)

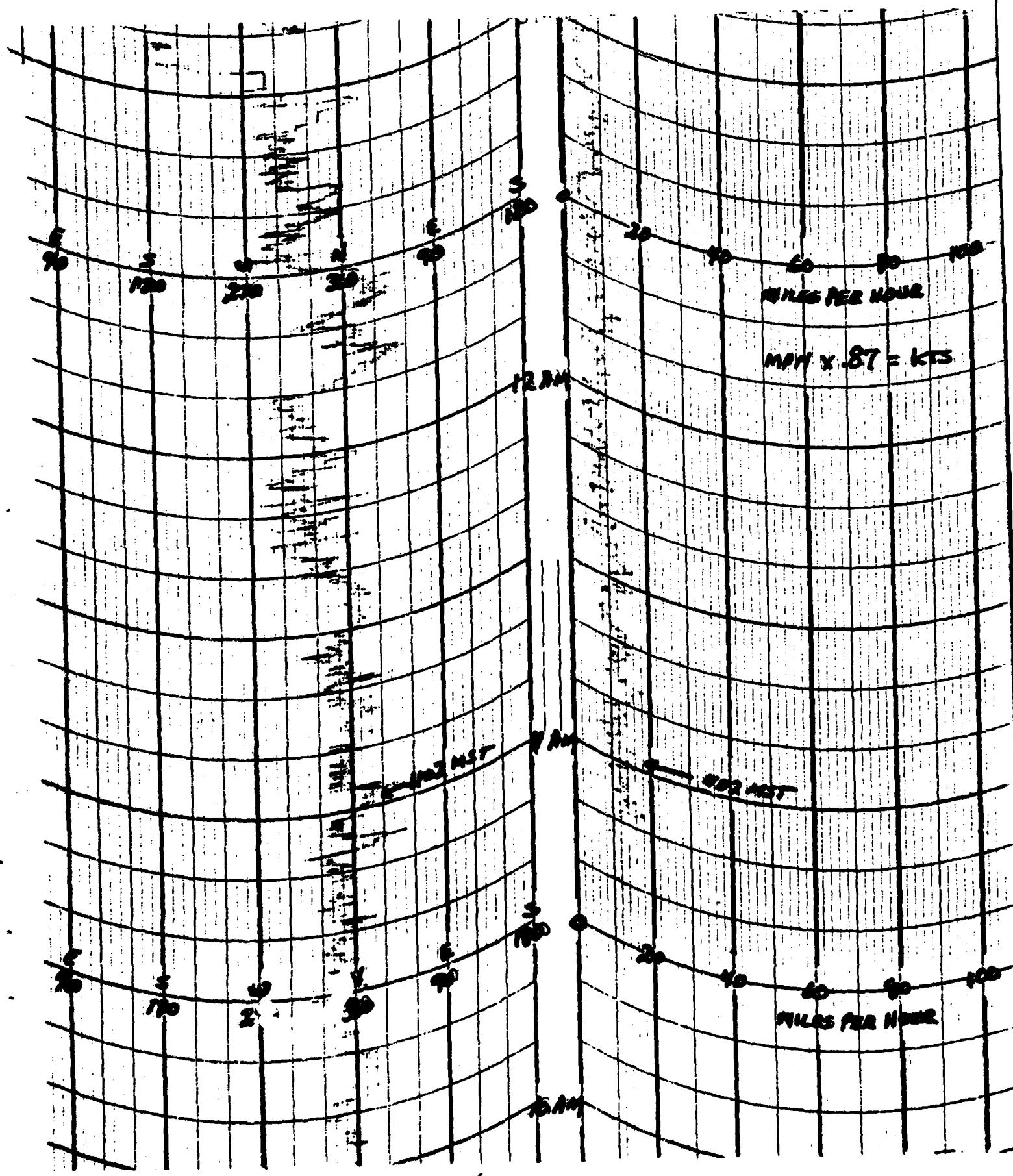
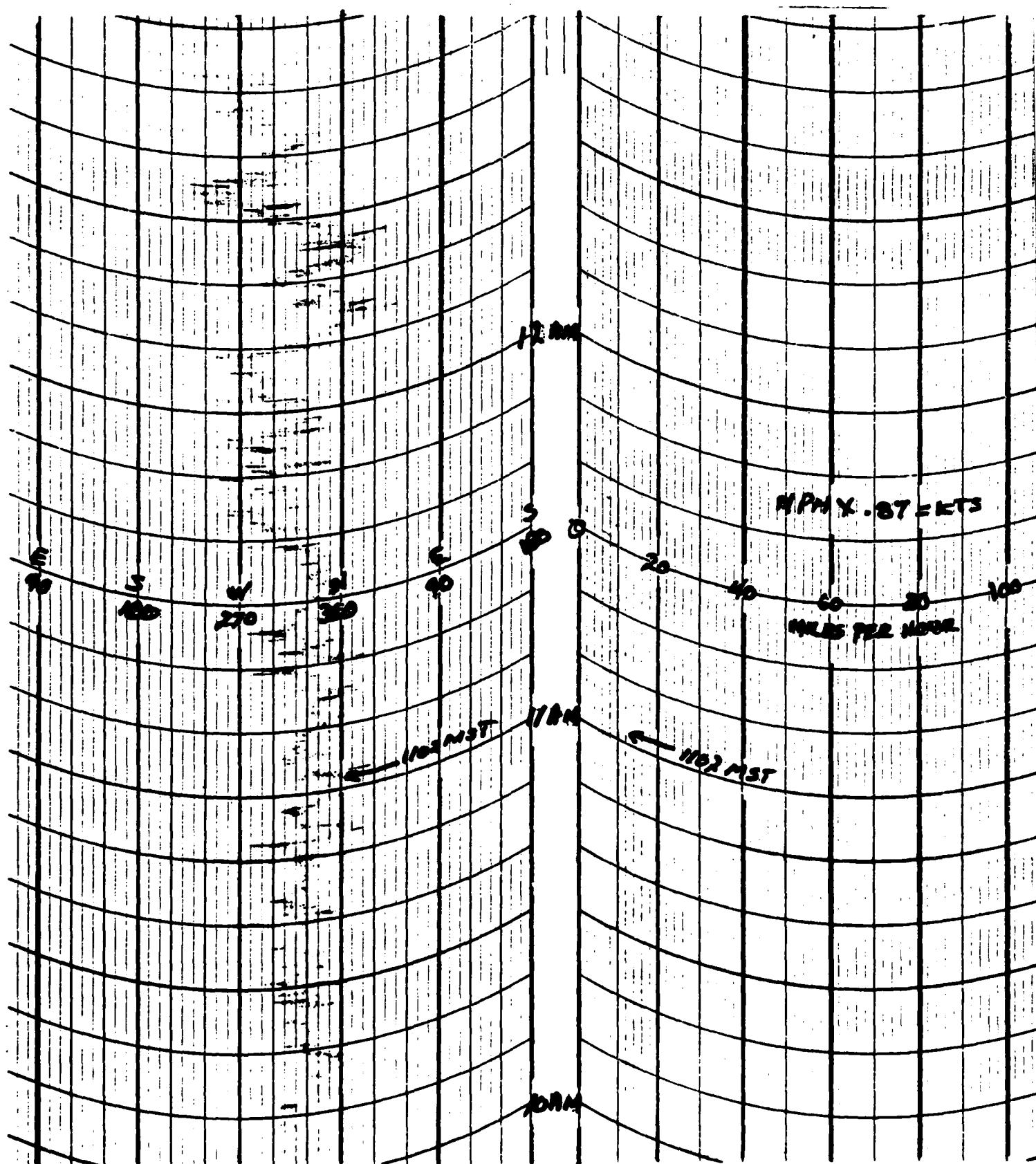


TABLE 4

ANEMOMETER DATA - 90 Ft Level of 30 Meter Tower

X= 545,944.89 Y= 431,158.70 H= 4102.47 (BASE)



T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 18 January 1984

SITE: Tula Gate

TIME: 1105 MST

WSTM COORDINATES:

X= 545,944.58

Y= 431,158.70

H= 4,102.47

SITE: MAL

TIME 1102 MST

WSTM COORDINATES:

X= 509,421.05

Y= 497,563.78

H= 4,133.09

LAYER	MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE		350	08
150		352	08
210		005	10
270		013	11
330		015	11
390		015	10
500		012	09
650		002	07
800		271	02
950		250	10
1150			
1350			
1550			
1750			
2000			

LAYER	MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE		010	10
150		015	09
210		020	09
270		015	09
330		015	09
390		010	09
500		355	08
650		290	07
800		255	14
950		260	15
1150		285	13
1350		305	18
1550		305	24
1750		305	28
2000		295	31

Data obtained from a Double Theodolite
Tracked pilot-balloon observation.

Data obtained from a Single Theodolite
Tracked pilot-balloon observation.

TABLE 6

AIMING AND T-TIME COMPUTER MET MESSAGES
18 January 1984

RITA 0945 MST	LANA 1015 MST	RITA 1100 MST
METCM1332062	METCM133106	METCM1332062
181660128879	181730127879	181800128879
00640010 27710879	00640006 27620879	00640010 27910879
01616012 27640868	01622010 27440869	01639019 27600868
02020009 27470842	02623009 27200842	02415002 27310841
03617010 27170801	03519009 26940800	03544004 26990800
04494020 26810752	04479020 26730751	04497015 26830751
05538025 26520705	05538026 26450705	05553029 26670705
06544040 26320661	06548041 26280660	06546038 26610661
07540046 26240619	07539048 26250619	07530044 26390620
08531051 25930580	08531054 26000580	08529050 26090581
09534055 25700543	09527061 25660543	09524057 25790544
10524064 25350508	10522064 25330508	10522064 25400509
11525065 25010475	11523068 25030475	11524063 25160476
12528071 24570428	12527082 24560428 13530094 23950372 14519102 23210322 15514102 22440277 16505100 21700238	12529072 24710430

STATION ALTITUDE 9166.70 FEET MSL
18 JAN. 1945 0945 HRS. MST
ACCESSION NO. 1

SIGNIFICANT LEVEL DATA
0100210001
RITA

GEODETIC COORDINATES
33-18295 LAT DEG
106-15114 LONG DEG

TABLE 7

PRESSURE GEOMETRIC MILLIBARS	GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE DEGREES CENTIGRADE	AIR DEPRESSION CENTIGRADS	KEL. HUM. PERCENT
874.0	9166.7	3.5	-12.0	31.0
850.0	5071.5	1.6	-13.5	31.0
803.7	6595.8	-1.5	-8.7	58.0
759.1	8029.3	-5.3	-15.6	44.0
742.6	8595.8	-5.5	-21.9	26.0
713.0	9639.5	-7.7	-29.1	16.0
700.0	10109.0	-8.5	-30.4	15.0
674.4	11056.5	-9.4	-31.1	15.0
655.6	11764.9	-10.7	-30.9	17.0
626.0	12661.7	-9.6	-32.0	14.0
604.3	13632.7	-12.4	-33.6	15.0
549.0	16271.9	-15.9	-35.2	17.0
531.2	17041.9	-16.9	-35.0	19.0
500.0	18524.5	-20.6	-37.6	20.0
489.2	19054.3	-21.6	-38.6	20.0
465.2	20267.0	-26.0	-40.5	20.0
449.2	21105.2	-25.2	-40.6	22.0
411.0	23289.7	-29.6	-44.4	22.0
400.0	23845.9	-30.0	-44.7	22.0
381.6	24944.9	-32.0	-46.1	23.0
346.2	27102.9	-37.3	-50.3	24.0

STATION ALTITUDE 4186.74 FEET MSL
10 JAN. 1945 MTS MSL
ASCENSION NO. 1

UPPER AIR DATA
0100210001
RITA

GEODETIC COORDINATES
33°16'29" LAT DEG
106°15'14" LON DEG

TABLE 8

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	WEIGHT METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (T)	WIND DATA KNOTS	INDEX OF REFRACTION
4186.7	876.0	30.5	-12.0	31.0	1105.5	680.3	360.0	9.9
4586.0	864.5	29.9	-12.5	31.6	1091.9	687.6	359.3	10.1
5080.0	852.3	1.9	-13.4	31.6	1078.3	696.5	358.2	10.3
5580.0	836.3	0.9	-11.6	36.6	1062.1	645.2	357.2	10.5
6080.0	828.5	-1.3	-6.9	46.6	1046.2	644.0	356.2	10.6
6580.0	805.1	-1.4	-8.6	57.2	1030.5	642.7	342.7	9.6
7080.0	789.8	-2.7	-16.7	53.7	1015.9	681.1	313.0	9.0
7580.0	774.7	-3.9	-13.1	49.9	1001.4	639.5	289.6	12.4
8080.0	760.9	-5.2	-15.5	49.3	987.2	636.0	279.9	17.1
8580.0	745.5	-5.5	-26.6	29.9	969.4	637.6	285.3	19.7
9080.0	731.9	-6.4	-26.6	22.1	954.1	636.5	290.3	22.2
9580.0	716.7	-7.4	-26.0	17.3	939.5	635.2	297.4	23.9
10080.0	703.0	-8.3	-36.1	15.2	924.5	634.1	302.8	26.4
10580.0	689.3	-9.9	-36.7	15.0	908.4	633.4	305.4	30.7
11080.0	675.9	-9.5	-31.1	15.9	892.3	632.8	306.4	34.7
11580.0	662.7	-10.2	-31.0	16.3	877.6	631.6	306.2	38.3
12080.0	649.7	-10.5	-31.1	16.4	861.4	631.5	305.6	40.7
12580.0	637.0	-10.0	-31.6	15.9	843.0	632.1	304.9	42.4
13080.0	624.6	-10.0	-32.2	14.1	826.6	632.0	304.0	45.2
13580.0	612.9	-11.4	-33.1	14.7	814.9	630.3	303.2	47.9
14080.0	600.3	-12.6	-33.7	15.1	802.5	626.9	302.3	50.7
14580.0	588.0	-13.4	-34.0	15.5	788.8	628.0	301.5	51.8
15080.0	576.1	-14.1	-34.4	16.0	775.3	627.1	300.7	52.1
15580.0	565.2	-14.6	-34.7	16.4	762.0	626.3	299.8	53.0
16080.0	554.9	-15.5	-35.1	16.8	749.9	625.4	298.9	54.1
16580.0	545.9	-16.2	-35.1	17.6	736.0	624.6	298.1	56.5
17080.0	532.1	-16.8	-35.0	16.9	723.1	623.6	297.2	58.0
17580.0	521.4	-16.1	-35.8	19.3	712.0	622.2	296.2	58.6
18080.0	510.8	-19.4	-36.8	19.6	701.2	620.6	295.4	59.3
18580.0	500.5	-20.7	-37.7	20.0	690.6	619.0	294.8	60.2
19080.0	490.3	-21.7	-36.5	20.0	679.2	617.8	294.9	62.3
19580.0	480.2	-22.6	-36.3	20.0	667.6	616.7	295.1	63.8
20080.0	470.4	-23.5	-46.1	20.0	656.3	615.6	295.4	64.6
20580.0	460.1	-24.3	-46.5	20.6	644.9	614.6	295.7	66.6
21080.0	451.2	-25.0	-46.6	21.7	633.4	613.7	296.0	68.5
21580.0	441.0	-26.0	-41.3	22.0	622.7	612.5	296.4	70.4
22080.0	432.5	-27.1	-42.2	22.0	612.3	611.2	296.8	71.9
22580.0	423.5	-28.1	-43.1	22.0	602.0	609.9	297.3	73.1
23080.0	414.7	-29.2	-44.0	22.0	592.0	608.6	298.2	74.0
23580.0	405.9	-29.8	-44.0	22.0	581.0	607.8	299.0	75.6

STATION ALTITUDE 4186.70 FEET MSL
IN JAN. 89
ACCLIMAT. HD.

UPPER AIR DATA
0110210001
RITA

GEODETIC COORDINATES
33.16295 LAT DEG
106.15114 LONG DEG

TABLE 8 (Cont'd)

GEODETIC ALTITUDE IN FEET	PRESSURE IN MILLIBARS	TEMPERATURE IN AIR DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY IN/CUBIC METER	SPEED OF WIND IN KNOTS	DIRECTION DEGREES (TN)	WIND DATA SPEED IN KNOTS	INDEX OF REFRACTION
24889.0	391.4	-39.3	22.1	369.9	607.2	300.9	77.9	1.000128
24589.0	389.9	-31.2	22.6	359.9	606.0	302.1	81.2	1.000125
25889.0	389.7	-32.1	23.2	359.2	604.8	302.6	84.7	1.000123
25589.0	372.5	-33.3	23.2	351.0	603.4	303.1	87.9	1.000121
26889.0	364.5	-35.5	23.5	352.0	601.9	302.9	90.2	1.000119
26589.0	352.0	-35.7	23.7	353.2	600.4			1.000117
27889.0	349.8	-36.9	23.9	354.5	598.9			1.000115

STATION ALTITUDE 4186.74 FEET MSL
18 JAN. 1945 HRS HST
ASCRIBED NO. 1

MANDATORY LEVELS
0100210001
RITA

GEODETIC COORDINATES
33°16'29" LAT DEG
106°15'14" LONG DEG

TABLE 9

PRESSURE GEOPOTENTIAL MILLIBARS	FLEET	DEGREES CENTIGRADE	TEMPERATURE AIR DEG. FAH.	REL. HUM. PERCENT	WIND DATA	
					DIRECTION DEGREES (TN)	SPEED KNOTS
650.0	5066.	1.0	-13.5	31.	350.1	10.3
600.0	6662.	-1.0	-9.2	57.	333.5	9.1
750.0	6313.	-5.4	-16.7	34.	289.7	16.8
700.0	10100.	-6.5	-30.4	15.	303.4	27.3
650.0	11977.	-10.5	-31.1	16.	305.6	40.6
600.0	13907.	-12.7	-35.7	15.	302.3	50.8
550.0	16162.	-15.0	-35.2	17.	298.6	54.9
500.0	18709.	-20.0	-37.0	20.	294.8	60.3
450.0	21632.	-25.1	-40.6	22.	296.1	68.7
400.0	23608.	-30.0	-44.7	22.	300.5	76.0
350.0	26898.	-36.7	-49.0	24.		

STATION ALTITUDE 4173.49 FEET MSL
10 JUN. 54 1015 HRS MDT
ASCENSION NO. 1

SIGNIFICANT LEVEL DATA
0109320001
LANA

GEODETIC COORDINATES
33°13'51" LAT DEG
106°15'44" LONG DEG

TABLE 10

PRESSURE OF ONE TROPIC	TEMPERATURE	REL.HUM. PERCENT
ALTITUDE	AIR TEMP POINT	
MILLION FEET	DEGREES CENTIGRADE	
870.4	6173.4	2.7
869.1	6085.4	9
858.8	5999.9	-7
850.3	6349.5	-5.8
786.9	7016.9	-4.4
751.6	8953.6	-6.7
786.8	10000.0	-9.2
656.8	11694.1	-10.9
639.8	12389.5	-9.6
598.5	14844.8	-11.6
581.8	18496.5	-20.6
466.4	26490.0	-24.1
422.4	22536.9	-26.5
407.8	23619.8	-29.9
351.6	28131.8	-39.3
350.8	39362.7	-64.9
250.8	34296.0	-54.0
200.8	38907.5	-63.9

STATION ALTITUDE 9173.44 FEET MSL
18 JAN. 84 1015 HRS NST
ACCESSION NO. 1

UPPER AIR DATA
OKE320001
LAWS

GEODETIC COORDINATES
33.13510 LAT deg
106.15466 LONG deg

TABLE 11

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CANTIGRADE	WELL NUMBER PERCENT	DENSITY gm/CUBIC METER	SPEED OF SOUND METERS/NOITS	WIND DATA DIRECTION DEGREES (111)	INDEX OF REFRACTION
9173.4	879.4	2.7	-3.6	62.0	1108.4	647.7	1.000270
8580.0	869.0	0.9	-16.4	26.1	1103.5	645.1	1.000254
3600.0	852.9	-5	-16.1	29.5	1088.1	643.5	1.000251
5580.0	836.1	-1.7	-15.6	33.0	1072.3	642.1	1.000249
6180.0	820.2	-3.0	-15.7	36.5	1056.6	640.6	1.000245
6580.0	804.0	-3.9	-15.5	40.1	1040.3	639.5	1.000241
7000.0	789.2	-4.4	-14.6	43.9	1022.1	639.0	1.000238
7580.0	770.1	-5.0	-17.2	37.7	1004.8	638.2	1.000232
8000.0	759.2	-5.6	-19.9	31.3	987.8	637.5	1.000227
8500.0	744.6	-6.2	-23.0	24.8	971.1	636.7	1.000221
9000.0	730.7	-6.6	-26.6	18.8	954.8	635.9	1.000216
9500.0	716.1	-7.9	-20.6	17.1	940.3	634.6	1.000213
10000.0	702.2	-9.0	-30.6	15.3	925.9	633.2	1.000209
10500.0	689.0	-9.6	-31.5	14.7	910.0	632.5	1.000205
11000.0	675.9	-10.2	-32.2	14.4	894.0	631.0	1.000201
11500.0	661.9	-10.7	-32.0	14.1	878.3	631.2	35.3
12000.0	648.9	-10.3	-32.3	14.4	859.9	631.6	39.5
12500.0	636.2	-9.7	-31.4	15.0	841.2	632.4	42.6
13000.0	623.0	-10.3	-31.9	15.0	826.6	631.6	46.5
13500.0	611.5	-10.9	-32.4	15.0	812.3	630.9	301.7
14000.0	599.6	-11.5	-32.9	15.0	798.2	630.2	303.1
14500.0	587.0	-12.5	-33.4	15.4	785.2	630.6	50.9
15000.0	575.0	-13.5	-34.0	15.9	772.5	627.8	53.2
15500.0	564.0	-14.5	-34.5	16.3	760.0	626.6	298.0
16000.0	553.0	-15.6	-35.1	16.8	747.8	625.3	297.5
16500.0	542.0	-16.6	-35.7	17.2	735.7	624.1	296.7
17000.0	531.2	-17.6	-36.3	17.7	723.9	622.9	295.8
17500.0	520.5	-18.6	-36.9	18.1	712.2	621.6	61.7
18000.0	510.1	-19.6	-37.5	18.6	700.8	620.4	56.7
18500.0	499.9	-20.6	-35.1	19.0	689.5	619.2	58.9
19000.0	489.7	-21.5	-36.7	19.3	677.7	618.1	61.7
19500.0	479.7	-22.4	-38.3	19.5	666.2	617.0	62.4
20000.0	469.8	-23.2	-40.0	19.8	654.8	615.9	69.5
20500.0	460.2	-24.1	-40.6	20.0	643.7	614.8	294.9
21000.0	450.0	-25.2	-41.4	20.2	633.0	613.5	295.4
21500.0	441.3	-26.3	-42.2	20.5	622.6	612.2	72.4
22000.0	432.1	-27.5	-43.0	20.7	612.3	610.8	296.0
22500.0	423.1	-28.4	-43.8	21.0	602.2	609.5	76.5
23000.0	414.2	-29.0	-44.3	21.0	590.9	608.0	83.6
23500.0	405.0	-29.6	-45.0	21.0	579.8	608.1	298.1

STATION ALTITUDE 4173.44 FEET MSL
18 JUN. 84 1015 HRS MSL
ASCENSION ISL.

UPPER AIR DATA
0100Z20001
LAWA

EOSTATIC COORDINATES
32° 15' 10" LAT DEG
166° 55' 46" LONG DEG

TABLE 11 (Cont'd)

STATION ALTITUDE FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES C	WIND POINT DEGREES C	WIND SPEED METER PERCENT KNOTS	DIRECTION DEGREES (10) KNOTS	WIND DATA INDEX OF REFRACTION
29600.0	306.9	-30.3	-65.4	21.1	569.2	607.1
29500.0	306.9	-31.4	-66.2	21.3	559.5	605.0
29400.0	306.9	-32.5	-67.1	21.5	556.0	604.4
29300.0	306.9	-33.6	-67.9	21.6	546.6	603.9
29200.0	306.9	-34.7	-68.8	22.8	531.4	601.7
29100.0	306.9	-35.7	-69.6	22.0	522.3	600.3
29000.0	306.9	-36.6	-70.5	22.5	513.5	596.9
28900.0	306.9	-37.6	-71.3	22.7	504.7	597.5
28800.0	305.5	-38.6	-72.2	22.9	496.2	596.1
28700.0	305.5	-39.6	-73.0	22.0	487.8	587.6
28600.0	305.2	-39.2	-74.7	19.2 ⁺	479.6	579.6
28500.0	305.2	-39.8	-75.3	18.0 ⁺	471.5	571.4
28400.0	305.2	-40.4	-76.2	17.2 ⁺	463.5	569.7
28300.0	305.2	-41.0	-77.0	16.6 ⁺	455.6	569.7
28200.0	305.2	-41.5	-77.6	16.0 ⁺	447.4	569.7
28100.0	305.2	-42.1	-78.1	15.4 ⁺	439.4	569.2
28000.0	305.2	-42.7	-78.6	14.8 ⁺	431.6	561.7
27900.0	305.2	-43.2	-79.0	14.2 ⁺	423.9	556.2
27800.0	305.2	-43.7	-79.4	13.6 ⁺	416.3	550.7
27700.0	305.2	-44.2	-79.8	13.0 ⁺	409.1	545.1
27600.0	305.2	-44.6	-80.1	12.4 ⁺	401.6	537.6
27500.0	305.2	-45.0	-80.4	11.8 ⁺	394.1	530.7
27400.0	305.2	-45.4	-80.7	11.2 ⁺	386.9	524.1
27300.0	305.2	-45.8	-81.0	10.6 ⁺	379.4	517.3
27200.0	305.2	-46.2	-81.3	10.0 ⁺	372.4	517.9
27100.0	305.2	-46.6	-81.6	9.4 ⁺	365.1	518.5
27000.0	305.2	-47.0	-81.9	8.8 ⁺	358.2	519.8
26900.0	305.2	-47.4	-82.2	8.2 ⁺	351.4	521.4
26800.0	305.2	-47.8	-82.5	7.6 ⁺	344.6	523.0
26700.0	305.2	-48.2	-82.8	7.0 ⁺	337.8	524.6
26600.0	305.2	-48.6	-83.1	6.4 ⁺	331.0	526.2
26500.0	305.2	-49.0	-83.4	5.8 ⁺	324.2	527.8
26400.0	305.2	-49.4	-83.7	5.2 ⁺	317.4	529.4
26300.0	305.2	-49.8	-84.0	4.6 ⁺	310.6	531.0
26200.0	305.2	-50.2	-84.3	4.0 ⁺	303.8	532.6
26100.0	305.2	-50.6	-84.6	3.4 ⁺	297.0	534.2
26000.0	305.2	-51.0	-84.9	2.8 ⁺	290.1	535.8
25900.0	305.2	-51.4	-85.2	2.2 ⁺	283.3	537.4
25800.0	305.2	-51.8	-85.5	1.6 ⁺	276.5	539.0
25700.0	305.2	-52.2	-85.8	1.0 ⁺	270.7	540.6
25600.0	305.2	-52.6	-86.1	0.4 ⁺	264.9	542.2
25500.0	305.2	-53.0	-86.4	0.0 ⁺	259.1	543.8
25400.0	305.2	-53.4	-86.7	-0.4 ⁺	253.3	545.4
25300.0	305.2	-53.8	-87.0	-0.8 ⁺	247.5	547.0
25200.0	305.2	-54.2	-87.3	-1.2 ⁺	241.7	548.6
25100.0	305.2	-54.6	-87.6	-1.6 ⁺	235.9	550.2
25000.0	305.2	-55.0	-87.9	-2.0 ⁺	229.1	551.8
24900.0	305.2	-55.4	-88.2	-2.4 ⁺	223.3	553.4
24800.0	305.2	-55.8	-88.5	-2.8 ⁺	217.5	555.0
24700.0	305.2	-56.2	-88.8	-3.2 ⁺	211.7	556.6
24600.0	305.2	-56.6	-89.1	-3.6 ⁺	205.9	558.2
24500.0	305.2	-57.0	-89.4	-4.0 ⁺	199.1	559.8
24400.0	305.2	-57.4	-89.7	-4.4 ⁺	193.3	561.4
24300.0	305.2	-57.8	-90.0	-4.8 ⁺	187.5	563.0
24200.0	305.2	-58.2	-90.3	-5.2 ⁺	181.7	564.6
24100.0	305.2	-58.6	-90.6	-5.6 ⁺	176.0	566.2
24000.0	305.2	-59.0	-90.9	-6.0 ⁺	170.2	567.8
23900.0	305.2	-59.4	-91.2	-6.4 ⁺	164.4	569.4
23800.0	305.2	-59.8	-91.5	-6.8 ⁺	158.6	571.0
23700.0	305.2	-60.2	-91.8	-7.2 ⁺	152.8	572.6
23600.0	305.2	-60.6	-92.1	-7.6 ⁺	147.0	574.2
23500.0	305.2	-61.0	-92.4	-8.0 ⁺	141.2	575.8
23400.0	305.2	-61.4	-92.7	-8.4 ⁺	135.4	577.4
23300.0	305.2	-61.8	-93.0	-8.8 ⁺	129.6	579.0
23200.0	305.2	-62.2	-93.3	-9.2 ⁺	123.8	580.6
23100.0	305.2	-62.6	-93.6	-9.6 ⁺	118.0	582.2
23000.0	305.2	-63.0	-93.9	-10.0 ⁺	112.2	583.8
22900.0	305.2	-63.4	-94.2	-10.4 ⁺	106.4	585.4
22800.0	305.2	-63.8	-94.5	-10.8 ⁺	100.6	587.0
22700.0	305.2	-64.2	-94.8	-11.2 ⁺	94.8	588.6
22600.0	305.2	-64.6	-95.1	-11.6 ⁺	89.0	590.2
22500.0	305.2	-65.0	-95.4	-12.0 ⁺	83.2	591.8
22400.0	305.2	-65.4	-95.7	-12.4 ⁺	77.4	593.4
22300.0	305.2	-65.8	-96.0	-12.8 ⁺	71.6	595.0
22200.0	305.2	-66.2	-96.3	-13.2 ⁺	65.8	596.6
22100.0	305.2	-66.6	-96.6	-13.6 ⁺	60.0	598.2
22000.0	305.2	-67.0	-96.9	-14.0 ⁺	54.2	599.8
21900.0	305.2	-67.4	-97.2	-14.4 ⁺	48.4	601.4
21800.0	305.2	-67.8	-97.5	-14.8 ⁺	42.6	603.0
21700.0	305.2	-68.2	-97.8	-15.2 ⁺	36.8	604.6
21600.0	305.2	-68.6	-98.1	-15.6 ⁺	31.0	606.2
21500.0	305.2	-69.0	-98.4	-16.0 ⁺	25.2	607.8
21400.0	305.2	-69.4	-98.7	-16.4 ⁺	19.4	609.4
21300.0	305.2	-69.8	-99.0	-16.8 ⁺	13.6	610.7
21200.0	305.2	-70.2	-99.3	-17.2 ⁺	8.8	612.3
21100.0	305.2	-70.6	-99.6	-17.6 ⁺	3.0	613.9
21000.0	305.2	-71.0	-99.9	-18.0 ⁺	-1.8	615.5
20900.0	305.2	-71.4	-100.2	-18.4 ⁺	-7.6	617.1
20800.0	305.2	-71.8	-100.5	-18.8 ⁺	-13.4	618.7
20700.0	305.2	-72.2	-100.8	-19.2 ⁺	-19.2	620.3
20600.0	305.2	-72.6	-101.1	-19.6 ⁺	-25.0	621.9
20500.0	305.2	-73.0	-101.4	-20.0 ⁺	-30.8	623.5
20400.0	305.2	-73.4	-101.7	-20.4 ⁺	-36.6	625.1
20300.0	305.2	-73.8	-102.0	-20.8 ⁺	-42.4	626.7
20200.0	305.2	-74.2	-102.3	-21.2 ⁺	-48.2	628.3
20100.0	305.2	-74.6	-102.6	-21.6 ⁺	-54.0	629.9
20000.0	305.2	-75.0	-102.9	-22.0 ⁺	-59.8	631.5
19900.0	305.2	-75.4	-103.2	-22.4 ⁺	-65.6	633.1
19800.0	305.2	-75.8	-103.5	-22.8 ⁺	-71.4	634.7
19700.0	305.2	-76.2	-103.8	-23.2 ⁺	-77.2	636.3
19600.0	305.2	-76.6	-104.1	-23.6 ⁺	-83.0	637.9
19500.0	305.2	-77.0	-104.4	-24.0 ⁺	-88.8	639.5
19400.0	305.2	-77.4	-104.7	-24.4 ⁺	-94.6	641.1
19300.0	305.2	-77.8	-105.0	-24.8 ⁺	-100.4	642.7
19200.0	305.2	-78.2	-105.3	-25.2 ⁺	-106.2	644.3
19100.0	305.2	-78.6	-105.6	-25.6 ⁺	-112.0	645.9
19000.0	305.2	-79.0	-105.9	-26.0 ⁺	-117.8	647.5
18900.0	305.2	-79.4	-106.2	-26.4 ⁺	-123.6	649.1
18800.0	305.2	-79.8	-106.5	-26.8 ⁺	-129.4	650.7
18700.0	305.2	-80.2	-106.8	-27.2 ⁺	-135.2	652.3
18600.0	305.2	-80.6	-107.1	-27.6 ⁺	-141.0	653.9
18500.0	305.2	-81.0	-107.4	-28.0 ⁺	-146.8	655.5
18400.0	305.2	-81.4	-107.7	-28.4 ⁺	-152.6	657.1
18300.0	305.2	-81.8	-108.0	-28.8 ⁺	-158.4	658.7
18200.0	305.2	-82.2	-108.3	-29.2 ⁺	-164.2	660.3
18100.0	305.2	-82.6	-108.6	-29.6 ⁺	-170.0	661.9
18000.0	305.2	-83.0	-108.9	-30.0 ⁺	-175.8	663.5
17900.0	305.2	-83.4	-109.2	-30.4 ⁺	-181.6	665.1
17800.0	305.2	-83.8	-109.5	-30.8 ⁺	-187.4	666.7
17700.0	305.2	-84.2	-109.8	-31.2 ⁺	-193.2	668.3
17600.0	305.2	-84.6	-110.1	-31.6 ⁺	-199.0	669.9
17500.0	305.2	-85.0	-110.4	-32.0 ⁺	-204.8	671.5
17400.0	305.2	-85.4	-110.7	-32.4 ⁺	-210.6	673.1
17300.0	305.2	-85.8	-111.0	-32.8 ⁺	-216.4	674.7
17200.0	305.2	-86.2	-111.3	-33.2 ⁺	-222.2	676.3
17100.0	305.2	-86.6	-111.6	-33.6 ⁺	-228.0	677.9
17000.0	305.2	-87.0	-111.9	-34.0 ⁺	-233.8	679.5
16900.0	305.2	-87.4	-112.2	-34.4 ⁺	-239.6	681.1
16800.0	305.2	-87.8	-112.5	-34.8 ⁺	-245.4	682.7
16700.0	305.2	-88.2	-112.8	-35.2 ⁺	-251.2	684.3
16600.0	305.2	-88.6	-113.1	-35.6 ⁺	-257.0	685.9
16500.0	305.2	-89.0	-113.4	-36.0 ⁺	-262.8	687.5
16400.0	305.2	-89.4	-113.7	-36.4 ⁺	-268.6	689.1
16300.0	305.2	-89.8	-114.0	-36.8 ⁺	-274.4	690.7
16200.0	305.2	-90.2	-114.3	-37.2 ⁺	-280.2	692.3
16100.0	305.2	-90.6	-114.6	-37.6 ⁺	-286.0	693.9
16000.0	305.2					

STATION ALTITUDE 9173.99 FEET MSL
15 JAN. 55
1015 HRS HST
ASSIGNMENT NO. 1

MANDATORY LEVELS
0100320001
LANA
TABLE 12

GEODETIC COORDINATES
33°13'51" LAT DEG
106°15'46" LONG DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE		REL.HUM. PERCENT	WIND DATA	
		DEGREES	DEGREES CENTIGRADE		DIRECTION DEGREES (TIN)	SPEED KNOTS
859.0	3066.	-7	-16.1	30.	301.3	6.7
860.0	6594.	-9.1	-15.3	41.	269.3	9.7
759.0	6399.	-5.9	-21.8	27.	274.5	19.0
709.0	10072.	-9.2	-31.0	15.	303.1	27.2
659.0	11945.	-10.4	-32.4	14.	306.6	41.7
609.0	13956.	-11.5	-32.9	15.	300.2	50.6
559.0	16137.	-15.6	-35.3	17.	296.4	59.6
509.0	18472.	-20.6	-38.1	19.	294.1	65.9
459.0	21807.	-25.3	-41.4	20.	295.5	72.5
409.0	23782.	-29.9	-45.1	21.	298.3	95.1
359.0	26851.	-36.6	-50.3	22.	295.8	97.5
309.0	30305.	-44.9			290.6	104.2
259.0	34225.	-54.0			286.5	99.9
209.0	38618.	-63.9				

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 9106.70 FEET MSL
18 JAN. 59 1100 HRS HST
ASCENSION NO. 2

SIGNIFICANT LEVEL DATA
01-021000Z
RITA

GEODETIC COORDINATES
33°18'29" LAT DEG
106°15'14" LON DEG

TABLE 13

PRESSURE GEODETIC MILLIBARS MSL FEET	ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEGREE CENTIGRADE	REL.HUM. PERCENT
878.7	4186.7	5.4	36.0
874.5	4314.0	3.7	16.6
871.2	4445.9	2.5	17.0
850.0	5866.7	4	15.9
784.7	7085.6	-4.7	-16.2
746.5	8940.6	-4.9	-26.6
700.0	10895.2	-6.9	-29.6
650.1	11984.7	-7.2	-30.1
592.7	16541.6	-15.5	-34.9
500.0	18560.6	-10.3	-37.5
436.8	21824.5	-25.6	-41.9
400.0	23910.4	-28.8	-44.6
370.3	25714.3	-32.5	-47.1
349.6	27640.6	-35.5	-50.3

STATION ALTITUDE 4166.74 FEET MSL
18 JAN. 54 1100 HRS MSL
ASCENSION NO. 2

UPPER AIR DATA
01021000Z
RITA

GEODETIC COORDINATES
33.18295 LAT DEG
106.15114 LON DEG

TABLE 14

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CANTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED, F	WIND DATA	INDEX OF REFRACTION
4166.7	876.7	5.4	-8.4	1097.4	650.7	360.0	9.9
4500.0	866.4	2.3	-16.9	1097.5	646.8	359.8	7.9
5000.0	852.1	.6	-16.0	1083.5	644.9	359.0	9.7
5500.0	836.9	-7	-15.8	1068.1	643.3	354.9	1.4
6000.0	820.1	-2.0	-15.4	1052.7	641.6	331.3	1.5
6500.0	804.6	-3.2	-16.0	1037.5	640.3	320.9	3.6
7000.0	789.5	-4.5	-16.2	1022.6	638.6	280.4	6.8
7500.0	774.2	-4.8	-16.6	1004.2	636.4	273.7	10.6
8000.0	759.3	-4.6	-22.3	985.4	638.3	275.6	14.0
8500.0	744.8	-5.0	-26.9	967.2	638.1	287.3	16.6
9000.0	730.4	-5.6	-27.6	950.7	637.4	298.9	19.8
9500.0	716.4	-6.2	-26.7	934.5	636.6	305.7	24.1
10000.0	702.0	-6.8	-29.7	918.6	635.9	309.8	26.7
10500.0	687.9	-7.0	-29.9	901.5	635.7	309.3	32.6
11000.0	675.7	-7.9	-29.9	884.3	635.6	308.7	36.2
11500.0	662.6	-7.1	-36.0	867.5	635.5	307.7	39.5
12000.0	649.8	-7.2	-36.1	851.0	635.4	306.0	40.5
12500.0	637.1	-8.1	-36.6	837.2	634.3	303.7	42.3
13000.0	624.0	-9.0	-31.1	819.6	633.6	301.5	44.5
13500.0	612.3	-10.0	-31.6	801.2	632.1	299.6	46.6
14000.0	600.9	-10.9	-32.1	797.1	631.0	298.6	47.3
14500.0	589.5	-11.8	-32.7	784.2	629.9	297.6	48.2
15000.0	576.9	-12.7	-33.2	771.5	628.8	296.4	49.3
15500.0	565.6	-13.6	-33.7	759.0	627.7	294.1	51.0
16000.0	554.5	-14.5	-34.3	746.7	626.6	293.0	52.5
16500.0	543.6	-15.4	-34.9	734.6	625.5	294.3	54.9
17000.0	532.7	-16.4	-35.5	722.5	624.3	295.7	56.4
17500.0	522.0	-17.3	-36.1	710.6	623.2	295.0	61.4
18000.0	511.5	-18.2	-36.8	698.9	622.0	294.4	62.2
18500.0	501.2	-19.2	-37.4	687.4	620.9	294.1	62.6
19000.0	491.0	-20.1	-38.1	675.9	619.7	294.2	63.2
19500.0	480.9	-21.1	-36.7	664.6	619.5	294.7	64.3
20000.0	471.1	-22.1	-39.4	653.5	617.3	295.4	66.0
20500.0	461.4	-23.0	-40.1	642.0	616.2	295.8	67.6
21000.0	452.0	-24.0	-40.7	631.9	615.0	296.0	68.6
21500.0	442.1	-25.0	-41.4	621.3	614.8	296.1	68.8
22000.0	433.6	-25.9	-42.1	610.7	612.7	296.7	70.1
22500.0	424.5	-26.6	-42.7	599.9	611.7	297.6	72.6
23000.0	415.7	-27.4	-43.4	589.2	610.8	298.5	73.6
23500.0	407.0	-28.2	-44.0	578.7	609.8	298.9	72.6

1.000130

1.000132

1.000139

20.0

STATION ALTITUDE 9186.79 FEET MSL
10 JAN. 89 1100 WNC HGT
ASCENSION NO. 2

UPPER AIR DATA
0100210002
RITA

GEODETIC COORDINATES
33°18'20" LAT DEG
106°15'14" LON DEG

TABLE 14 (Cont'd)

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES C	DEWPOINT DEGREES C	PERCENT HUMIDITY	REL.HUM. PERCENT	SOUND METER	SPEED, "F KNOTS	DIRECTION DEGREES (TN)	WIND DATA KNOTS	INDEX OF REFRACTION
240000.0	396.5	-29.0	-44.7	20.0	560.4	600.6	298.7	72.1	1.000127	
245000.0	390.0	-29.9	-45.4	20.3	550.6	607.6	298.2	78.3	1.000125	
250000.0	381.8	-30.9	-46.1	20.6	549.0	606.4	298.0	85.2	1.000123	
255000.0	373.7	-31.9	-46.8	20.9	539.6	605.1	297.4	86.0	1.000121	
260000.0	365.7	-33.0	-47.0	20.8	530.5	603.8	296.3	90.3	1.000119	
265000.0	357.9	-34.2	-49.0	20.4	521.7	602.2			1.000117	
270000.0	350.2	-35.4	-50.2	20.0	513.1	600.7			1.000115	

STATION ALTITUDE 4186.74 FEET MSL
18 JAN. 64
ASCENSION NO. 2

MANDATORY LEVELS
0108021000Z
RITA

GEODETIC COORDINATES
33.1629 LAT DEG
106.15114 LONG DEG

TABLE 15

PRESSURE WILLIAMS	GEOPOTENTIAL FEET	TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	WIND DATA DIRECTION DEGREES (TN)	WIND SPEED KNOTS
650.0	5063.	-4	-15.9	280	358.9
660.0	6417.	-3.6	-16.0	37.	303.0
750.0	8313.	-4.9	-25.4	18.	281.9
790.0	10056.	-6.9	-29.6	14.	309.7
650.0	11992.	-7.2	-30.1	14.	306.1
660.0	14014.	-10.9	-32.1	15.	298.6
550.0	16198.	-14.9	-34.5	17.	293.6
500.0	18536.	-19.3	-37.5	18.	294.1
450.0	21042.	-24.2	-40.9	20.	296.0
400.0	23873.	-28.8	-44.6	20.	298.8
350.0	26968.	-35.4	-50.3	20.	71.1

END

FILMED

6-84

DTIC